SUBJECT USSR/MATHEMATICS/Theory of functions CARD 1/3 PG -453
AUTHOR GERONIMUS Ja.L.
TITLE On some properties of analytic functions being continuous in the closed circle or sector of a circle.
PERIODICAL Mat.Sbornik, n. Ser. 38, 319-330 (1956)
reviewed 12/1956

The paper contains some generalizations of known results of Hardy, Littlewood, Gagua and others. Let $\varphi(z) = \varphi(r\,e^{i\theta})$ be continuous for $r \leq 1$. Let its modul of continuity for $r = 1$ be $\omega(\delta, \varphi) = \sup |\varphi(e^{i\theta_1}) - \varphi(e^{i\theta_2})|$, $|\theta_1 - \theta_2| \leq \delta$.

Let Λ be the function class for which $\int_a^b \frac{\omega(x,\varphi)}{x}\,dx < \infty$. If $u(\theta) \in L(0,2\pi)$ is a real 2π-periodic function and $v(\theta)$ is conjugated to it, then $f(z)$ denotes the analytic function

$$f(z) = f(r\,e^{i\varphi}) = \frac{1}{2\pi}\int_0^{2\pi} \frac{e^{i\theta}+z}{e^{i\theta}-z}\,u(\theta)\,d\theta + iC,$$

The following theorems are proved:

Mat.Sbornik, n. Ser. 38, 319-330 (1956) CARD 2/3 PG - 453

1. Let $w = f(z)$ map the unit circle onto a region B which is bounded by a closed smooth Jordan curve C. Let $\Theta(s) \in \Lambda$, where Θ is the angle between the real axis and the tangent on C in the point with the arc coordinate s. Then the modul of continuity $\omega_0(\delta)$ of the functions $f'(z)$ and $f''(z)$ on $|z| = 1$ satisfies the inequation

$$\omega_0(\delta) \leq C_1 \int_0^{\delta} \frac{\omega(x,\theta)}{x}\, dx + C_2 \delta \int_{\delta}^{\pi} \frac{\omega(x,\theta)}{x^2}\, dx + C_3\, \omega(\delta,\theta).$$

2. Let $f(z)$ be regular in $|z|<1$, continuous in $|z| \leq 1$ and have a modul of continuity $\omega(\delta) = \omega(\delta, f)$ on $|z| = 1$. Then in $|z|<1$ holds

$$|f'(r\, e^{i\varphi})| \leq C \; \frac{\omega\left[(1-r)\lg \frac{b}{1-r}\right]}{1-r}, \quad r<1, \quad b>1.$$

3. If $f(z)$ is regular in $|z|<1$ and if it has the modul of continuity $\omega(\delta)$ on the circular radii, then

$$\left|f'(r\,e^{i\varphi})\right| \leqslant C\,\Omega\left(\frac{1}{1-r}\right) \qquad \Omega(x) = \int_1^x \omega\left(\frac{1}{x}\right) dx$$

4. If $u(\theta) \in L(0,2\pi)$ is a real 2π-periodic function which is continuous for $\theta \in 1 \subset [0,2\pi]$ and if there exists the integral

$$\int_0^a \frac{\omega(x\ \lg\frac{b}{x}\ ;\ u)}{x}\,dx < \infty \qquad b > 2,$$

then inside of the sector S $(r \leq 1,\ \theta \in 1)$ the inequation

$$\left|f'(r\,e^{i\varphi})\right| \leqslant C\ \frac{\omega\left[(1-r)\lg\frac{b}{1-r}\ ;\ u\right]}{1-r}\ , \quad r < 1$$

is valid.

INSTITUTION: Charkov.

SUBJECT	USSR/MATHEMATICS/Fourier series	CARD 1/1	PG - 646
AUTHOR	GERONIMUS Ja.L.		
TITLE	On some sufficient conditions for the convergence of the Fourier-Čebyšev processes.		
PERIODICAL	Doklady Akad.Nauk 110, 907-909 (1956) reviewed 3/1957		

Let the function f(x) be defined on $[-1,+1]$ and the polynomials $\{p_n(x)\}_0^\infty$ on the same interval be orthogonal with respect to $d\psi(x)$ and normalized. In a table the author establishes nine sufficient conditions for the convergence of the Fourier-Čebyšev process

$$\lim_{n\to\infty} S_n(f;x) = \sum_{k=0}^{\infty} a_k p_k(x) = f(x), \qquad a_k = \int_{-1}^{+1} f(x)p_k(x)d\psi(x) \qquad k=0,1,\ldots.$$

The first condition relates to the quasi-uniform convergence on $[a,b]$ $(-1<a<b<+1)$ all other conditions guarantee a uniform convergence on $[-1,+1]$. The conditions are concluded from the estimations of the author (Doklady Akad.Nauk 103, No. 3 (1955)).

SOV/44-58-4-3038

Translation from: Referativnyy zhurnal, Matematika, 1958, Nr 4, p 89 (USSR)

AUTHOR: Geronimus, Ya. L.

TITLE: On Certain Finite Difference Equations and Corresponding Systems of Orthogonal Polynomials (O nekotorykh uravneniyakh v konechnykh raznostyakh i sootvetstvuyushchikh sistemakh ortogonal'nykh mnogochlenov)

PERIODICAL: Uch. zap. Khar'khovsk. un-ta, 1957, Nr 80; Zap. Matem. otd. fiz-matem. fak. i Khar'khovsk. matem. o-va, 25, pp 87-100

ABSTRACT: With several additions, a detailed proof is given of earlier results of the author (Dokl. AN SSSR, 1940, Nr 29, pp 536-538).
Let $\{a_k\}$ and $\{\lambda_k\}$ $(\lambda_k \neq 0)$ be two sequences of complex numbers. Following Perron and Stieltjes, according to the given numbers a sequence of polynomials $\{P_k^{(i)}(z)\}$ is constructed, whereupon the polynomials
$P_n^{(1)}(z)$ and $\lambda_1 P_{n-1}^{(2)}(z)$

Card 1/3

SOV/44-58-4-3038

On Certain Finite Difference Equations (Cont.)

are particular solutions of the difference equations

$$y_n - (z - \alpha_n) y_{n-1} + \lambda_n y_{n-2} = 0 \qquad (1)$$

If periodicity occurs, that is

$$\alpha_n = a_m, \lambda_n = l_m, \ n-s \equiv m \pmod{k}; \ (m = 0, 1, \dots, k), \ n \geq s+1, s \geq 0 \qquad (2)$$

then the solution of equation (1) satisfies an equation with constant coefficients

$$y_{n+2k} - (P_k - r_{k-2}) y_{n+k} + l y_n = 0, \quad n \geq s-1 \qquad (3)$$

Here P_k and r_{k-2} are certain polynomials with respect to z and $l = l_1 l_2 \dots l_k$.

The solution of equation (3) is found in explicit form; certain of its properties and properties of the polynomial of the form $P_k^{(l)}(z)$ are indicated.

Card 2/3

SOV/44-58-4-3038

On Certain Finite Difference Equations (Cont.)

If all the parameters $\{a_\nu\}$ and $\{\lambda_\nu\}$ $(\lambda_\nu > 0)$ are real, then as is known, the corresponding polynomials $\{P_n(x)\}$ are orthogonal in the sense that there exists such a $d\psi(x)$ that $\int_{-\infty}^{+\infty} P_m(x) P_n(x) d\psi(x) = 0$, $m \neq n$, and they satisfy equation (1). It is shown that when the condition (2) is satisfied, $\psi(x) = \psi_1(x) + \psi_2(x)$. Function $\psi_1(x)$ is an absolutely continuous component, and $\psi_2(x)$ is a jump function. Certain properties of $\psi_1(x)$ and $\psi_2(x)$ are established. The proof is based on the study of continuous fractions. In conclusion some examples are cited. In the work of the author (Izv. AN SSSR, 1941, 5, Nr 3, pp 203-210) a more general case of limit periodicity is studied.

A.A. Mirolyubov

Card 3/3

SOV/124-59-1-43

Translation from: Referativnyy zhurnal. Mekhanika, 1959, Nr 1, p 4 (USSR)

AUTHOR: Geronimus, Ya.L.

TITLE: On the Properties of the Hamilton-center of Certain Vector Systems

PERIODICAL: Tr. Khar'kovsk. aviats. in-ta, 1957, Nr 17, pp 11-21

ABSTRACT: Some new facts with reference to the properties of the Hamilton-center in application to certain special systems of stationary physical vectors are given. For example, in application to a vector-system, lying in planes perpendicular to some straight line, is proved the invariance of the Hamilton-center and of the parameter of the screw of the given system relative to the group of rotations of vectors in their planes; demonstration is based upon the application of the quaternion-theory. Some results of the treatise can be applied, for example, to the research of the properties of the Hamilton system of vectors $m(d^n r/dt^n)$ with reference to the rotation of a body around an axis and with reference to the plane-parallel motion; the part of the Hamilton-center in applying the forces of inertia of the points of a symmetrical gyroscope in the case of regular precession is interpreted, et a.

Card 1/1

V.V. Dobronravov

GERONIMUS, Ye.L., prof., doktor fiz.-mat. nauk.

Activity of the Kharkov branch of the Seminar on the Theory of Machines and Mechanisms. Trudy Inst. mash. Sem. po teor. mash. 17 no.65:18-19 '57. (MIRA 10:12)

1. Nauchnyy rukovoditel' Khar'kovskogo filiala seminara po teorii mashin i mekhanizmov Instituta mashinovedeniya AN SSSR.
(Kharkov--Mechanical engineering)

GERONIMUS, Ya.L. (Khar'kov)

Certain finite-difference equations and corresponding systems of orthogonal polynomials. Uch.zap.KHGU 80:87-100 '57. (MIRA 12:11)

(Difference equations) (Polynomials)

AUTHOR GERONIMUS IA.L. PA - 3122

TITLE On the Uniform Convergence of the FOURIER-CHEBYSHEV and the MACLAURIN Developments of the Analytical Functions of the Class H_2

PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 3, pp 491-492 (USSR).
Received: 6/1957 Reviewed: 7/1957

ABSTRACT The polynomials $\{P_n(z)\}$ are assumed to be orthonormal in the unit surrounding $z = e^{i\theta}$ with respect to the weight $p(\theta) \geqslant 0$ where $\lg p(\theta) \in L_1$ applies. The function $f(z)$ is assumed to be regular within the domain $|z| < 1$, where $f(z) \in H_2$ and $f(z)/\pi(z) \in H_2$ apply. Here

$$\pi(z) = \exp\left\{-\frac{1}{4\pi}\int_0^{2\pi}\frac{e^{i\theta}+z}{e^{i\theta}-z}\lg p(\theta)\,d\theta\right\}, \quad |z| < 1$$

is denoted by $s_n(f;z)$. $\sigma_n(f;z)$ are the partial sums of the developments of the function $f(z)$ into a FOURIER-CHEBYSHEV-series according to the orthogonal polynomials $\{P_k(z)\}$ and into a

CARD 1/4

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514910016-4"

PA - 3122

On the Uniform Convergence of the FOURIER-CHEBYSHEV and the MACLAURIN Developments of the Analytical Functions of the Class H_2.

MAC LAURIN series, i.e. according the polynomials $\{z^k\}$:

$$s_n(f;z)=\sum_{k=0}^{n} c_k p_k(z),\quad c_k=(1/2\pi)\int_0^{2\pi} f(e^{i\theta})\, \overline{p_k(e^{i\theta})}\, p(\theta)d\theta$$

$$\sigma_n(f;z)=\sum_{k=0}^{n} \gamma_k z^k,\quad \gamma_k=(1/2\pi)\int_0^{2\pi} f(e^{i\theta})e^{-ik\theta}d\theta$$

Of all theorems on the convergence of the FOURIER-CHEBYSHEV-developments the theorem on the uniform convergence of these decompositions is the most interesting. Here the condition is concerned, for which the limiting relation lim

$$\lim_{n\to\infty}\left\{s_n(f;e^{i\theta})-\sigma_n(f;e^{i\theta})\right\}$$ applies uniformly within a certain

CARD 2/4

PA - 3122

On the Uniform Convergence of the FOURIER-CHEBYSHEV and the MACLAURIN Developments of the Analytical Functions of the Class H_2.

section $[\alpha,\beta] \subset [0,2\pi]$

Theorem: The weight $p(\theta)$ is assumed to be limited in the section $[\alpha,\beta]$ by a positive number and to be steady with the stability modulus $\omega(\delta;p)$.
This stability modulus satisfies the condition by DINI-LIPP-SCHITZ

$$\omega(\delta;p) \leqslant c(\lg(1/\delta))^{-\gamma}, \quad \gamma > 2$$

The function $f(z)$ is assumed to have a limited radial limit value in all points of the arc. $[e^{i\alpha}, e^{i\beta}]$.
In this case the condition $\lim_{n\to\infty}\{\varepsilon_n \lg n = 0$ with

$$|P_n^*(e^{i\theta}) - \pi(e^{i\theta})| \leqslant \varepsilon_n, P^*(z) = z^n \bar{P}_n(1/z), \alpha+\eta \leqslant \theta \leqslant \beta - \eta.$$

is sufficient for the uniform convergence of $\lim_{n\to\infty}\{s_n(f;e^{i\theta}) - \sigma_n(f;e^{i\theta})\}$

CARD 3/4

PA - 3122

On the Uniform Convergence of the FOURIER-CHEBYSHEV and the MACLAURIN Development of the Analytical Functions of the Class H_2.

= 0 in the section $[\alpha + \eta', \beta - \eta']$, $\eta' > \eta$.
Thus, the existence of the asymptotic formula with the error $\varepsilon_n = O(1/\lg n)$ satisfied the conditions of uniform convergence. A table contains the 5 conditions found here, each of which suffices for the existence of the here mentioned asymptotic formula.
(1 Table).

ASSOCIATION: not given.
PRESENTED BY: V.I. SMIRNOV, Member of the Academy, 6.10. 1956.
SUBMITTED: 4.10. 1956.
AVAILABLE: Library of Congress.

CARD 4/4

AUTHOR: GERONIMUS, Ya.,L.. 20-1-5/42

TITLE: On Some Estimations in the Theory of Töplitz Forms and Orthogonal Polynomials (O nekotorykh otsenkakh v teorii form Teplitsa i ortogonal'nykh mnogochlenov)

PERIODICAL: Doklady Akad.Nauk SSSR, 1957, Vol. 117, Nr. 1, pp. 25-27 (USSR)

ABSTRACT: The author considers the forms

$$T_n = \sum_{i,k=0}^{n} c_{i-k} x_i \bar{x}_k \, , \; c_{-n} = \bar{c}_n \, , \Delta_n = \left| c_{i-k} \right|_0^n \, , \quad n=0,1,2,\ldots \, ,$$

positive definite for $\left\{ \Delta_n \right\}_0^\infty > 0$. If it is denoted

$$h_n = \frac{\Delta_{n+1}}{\Delta_n} \, , \text{ then there exists } \lim_{n\to\infty} h_n = h \geqslant 0 \, .$$

The author gives several estimations for the magnitude $\mu_n = h_n - h$ and shows that various estimations can be expressed by μ_n, e.g. the estimation of increase of orthogonal polynomials.- 5 Soviet and 2 foreign references are quoted.

ASSOCIATION: Khar'kov Institute of Aviation (Khar'kovskiy aviatsionnyy institut)
PRESENTED: By V.I.Smirnov, Academician, May 23, 1957
SUBMITTED: May 21, 1957
AVAILABLE: Library of Congress
Card 1/1

[illegible]

Ya. L. Geronimus, "The Application of the Tschebischew Methods in Some Problems of Dynamic Mechanism Synthesis."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

16(1); 25(2) PHASE I BOOK EXPLOITATION SOV/1741

Geronimus, Yakov Lazarevich

Dinamicheskiy sintez mekhanizmov po metodu Chebysheva (Dynamic Synthesis of Mechanisms According to Chebyshev Method) Khar'kov, Izd-vo Khar'kovskogo univ., 1958. 133 p. 3,000 copies printed.

Resp. Ed.: Yu.V. Epshteyn; Ed.: D.A.Vaynberg; Tech. Ed.: Ya.T. Chernyshenko,

PURPOSE: This book is intended for senior students at vtuzes and for engineers and mathematicians.

COVERAGE: The book deals with the problem of the dynamic synthesis of mechanisms according to Chebyshev's method and the development and application of this method by Soviet mathematicians. Methods studied and results received in the book may have direct application to practical problems. The book is an extension of the author's report on the theory of machines and mechanisms presented at the meeting of the Institut mashinovedeniya (Institute

Card 1/6

of Mechanical Engineering) of the Academy of Sciences, USSR, held on the occasion of the 130th anniversary of Chebyshev's birth. Contemporary Soviet scientists mentioned in connection with the problem presented in the book include Academician V.A. Steklov, Academician I.I. Artobolevskiy, N.I. Levitskiy, Z.Sh. Blokh, V.I. Ivanov, P.N. Gartshtein, Yu. V. Epshtein, L.I. Shteyuvol'f, and L.B. Geyler. There are 53 references, of which 52 are Soviet and 1 French.

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Dynamic Synthesis of Mechanisms (Cont.) SOV/1741

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APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514910016-4"

Dynamic Synthesis of Mechanisms (Cont.) SOV/1741

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Card 6/6

16(1) PHASE I BOOK EXPLOITATION SOV/1642

Geronimus, Yakov Lazarevich

Mnogochleny, ortogonal'nyye na okruzhnosti i na otrezke; otsenki, asimptoticheskiye formuly, ortogonal'nyye ryady (Polynomials Which Are Orthogonal on a Circle and on a Segment; Estimates, Asymptotic Formulas, Orthogonal Series) Moscow, Fizmatgiz, 1958. 240 p. (Series: Sovremennyye problemy matematiki) 5,000 copies printed.

Ed.: V. S. Videnskiy; Tech. Ed.: V. N. Kryuchkova.

PURPOSE: This book may be useful to scientific workers and Aspirants working in mathematics or mathematical physics.

COVERAGE: The book presents the author's attempt to develop and to apply the methods and ideas of Soviet mathematicians V. A. Steklov, S. N. Bernshtein, V. I. Smirnov, A. N. Kolmogorov, N. I. Akhiyezer, M. G. Kreyn and of such

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non-Soviet mathematicians as G. Szegö, P. Erdös, P. Turan and G. Freud to the solution of important problems of the theory of orthogonal polynomials. The author deals with those properties of orthogonal polynomials, on which the convergence of infinite processes connected with orthogonal polynomials depends - the Fourier-Chebyshev process, the interpolation process with nodes in zeros of orthogonal polynomials, etc. The monograph gives a systematic presentation of the works of Soviet and non-Soviet mathematicians, including the author, in this field of mathematics. The book is one of a series published by the editorial staff of Uspekhi matematicheskikh nauk. The author thanks N. I. Akhiyezer for reading the manuscript and for valuable remarks. There are 67 references, of which 36 are Soviet, 14 English, 10 German, 6 French and 1 Czech.

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Polynomials Which Are Orthogonal (Cont.) SOV/1642

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Card 5/5

AUTHOR: ~~Geronimus, Ya.L.~~ (Khar'kov) SOV/140-58-1-3/21

TITLE: On Some Properties of the Functions of the Class L_p (O nekotorykh svoystvakh funktsiy klassa L_p)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Ministerstva vysshego obrazovaniya SSSR, Matematika, 1958, Nr 1 pp 24-32 (USSR)

ABSTRACT: Let $f(\theta)$ be a real 2π-periodic function of the class $L_p, p > 1$ and $\omega_p(\delta, f) = \sup_{|h|\leqslant\delta} \|f(\theta + h) - f(\theta)\|_p$, $\lim_{\delta\to 0} \omega_p(\delta, f) = 0$.

The author proves the theorem already announced in [Ref 2] and the following further theorems:

Theorem: Let

$$f(\theta) \in L_p,\ p > 1,\ \sum_{n=1}^{\infty} n^{-1/p'} \omega_p\left(\frac{1}{n};\ f\right) < \infty,\ \frac{1}{p} + \frac{1}{p'} = 1$$

Then $f(\theta)$ is equivalent to a continuous function $f_o(\theta)$ with the dulus of continuity

$$\omega(\delta, f_o) \leqslant C \int_{1/\delta}^{\infty} \frac{dx}{x} \int_{x}^{\infty} y^{-1/p'} \omega_p\left(\frac{1}{y};\ f\right) dy$$

Card 1/3

(so far as the double integral exists).

Theorem: If $f(\theta) \in L_p$, $p > 1$ and $\omega_p(\delta, f) = O\left\{\delta^{1/p}\left[\lg \frac{1}{\delta}\right]^{-3}\right\}$,

then the Fourier series of $f(\theta)$ converges uniformly on $[0, 2\pi]$ and attains almost everywhere the values of $f(\theta)$.

Theorem: Let $f(\theta) \in L_1(0, 2\pi)$, on $[\alpha, \beta] \subset [0, 2\pi]$ let $f(\theta) \in L_p$, $p > 1$ and

$$\omega'_p(\delta; f) = \sup_{|h| \leqslant \delta}\left\{\frac{1}{2\pi}\int_\alpha^\beta |f(\theta + h) - f(\theta)|^p \, d\theta\right\}^{1/p} = O\left\{\delta^{1/p}\left[\lg \frac{1}{\delta}\right]^{-3}\right\}.$$

Then the Fourier series of $f(\theta)$ converges uniformly in $[\alpha, \beta]$ and attains almost everywhere the values of $f(\theta)$.

Some further results related to the results of Hardy and Littlewood are given.

There are 12 references, 5 of which are Soviet, 1 Polish, 1 English, 1 French, 1 Hungarian, 1 American, and 2 German.

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On Some Properties of the Functions of the Class L_p SOV/140-58-1-3/21

ASSOCIATION: Khar'kovskiy aviatsionnyy institut (Khar'kov Aviation Institute)

SUBMITTED: September 23, 1957

Card 3/3

GERONIMUS, Ya.L.

Some evaluations for orthogonal polynomials. Nauch. dokl. vys. skoly; fiz.-mat.nauki no.1:28-31 '58. (MIRA 12:3)

1.Khar'kovskiy aviatsionnyy institut.
(Functions, Orthogonal)

S/147/59/000/04/020/020
E031/E413

AUTHOR: Zolotukhin, V.K.

TITLE: The Scientific-Technical Conference at Khar'kov Aviation Institute

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 4, pp 161-165 (USSR)

ABSTRACT: In May 1959, the 16th Conference of Professorial and Teaching Staff took place.

Mathematics and Mechanics Section. The following papers were read: "A Spectral Representation of the Theory of Axisymmetric Turbulence" by Candidate of Physical and Mathematical Sciences G.M.Teranova; "Some Evaluations for Functions with Positive Real Parts" by Assistant G.S.Shpak; "Existence, Uniqueness and Correctness Theorems for Mixed Systems of Functional Equations" by Docent, Candidate of Physical and Mathematical Sciences M.N.Tikhov; "On the Application of Boll and Chebyshev Points to the Solution of Some Problems in the Synthesis of Four Bar Linkages" by Docent, Candidate of Physical and Mathematical Sciences Ya.L.Geronimus; "The Influence of the Structural Properties of Functions on the Convergence Almost Everywhere of their Conjugate Fourier Series" by Docent, Candidate of Physical and Mathematical Sciences B.L.Golinskiy.

General Technological Section. The following papers were read: "The Relation Between the Compton Length of Waves, the Length of de Broglie Waves and the Acceleration Potential for High Energy Particles" by Docent, Candidate of Physical and Mathematical Sciences I.Ya.Mints; "The Problem of Determining the Heat Transfer Coefficient of Conductors" by Senior Instructor P.P.Heruclov. "An Electron-Graphical Method of Investigating the Structure of Matter" by Assistant I.Ye.Surovtsev; "On the Results of the VIII th Mendeleyev Congress of Chemists of the USSR" by Docent, Candidate of Chemical Sciences F.I.Krech.

Card 3/11

Electrical and Radio Technology Section. The following papers were read: "On the Problem of the Optimum Passage of Transients in an Electric Drive with a Controlling Exciter" by Docent, Candidate of Technical Sciences M.M.Perel'muter; "The Experimental Determination of the Reactances in Synchronous Machines" by Senior Instructor S.V.Khmel'nitskiy; "An Experimental Method of Investigating Electric Fields" by Assistant A.I.Lopatin; "A Discrete Transformer of Current into Code Signals with Magneto-Electric Comparison Units" by Docent, Candidate of Technical Sciences G.M.Mitrayev; "The Application of Infrared Instruments in Aviation" by Docent, Candidate of Technical Sciences I.D.Artamonov.

General Engineering Section. "The Adaptation of a Thermobaric Chamber to the Simulation of the Sinking of a Mine Shaft in Quicksand and Certain Results of Investigations to Determine the Mechanical Characteristics of Sand at Different Temperatures and Humidities" by Docent, Candidate of Technical Sciences S.V.Biyashenko; "Friction and Abrasion in Cermets" by Docent, Candidate of Technical Sciences O.I.Goldavaya; "The Construction of Multi-Satellite Planetary Gears" by Assistant V.A.Taranenko; "The Influence of Work Hardening on the Fatigue of Threaded Connections" by Assistant V.M.Rydchenko; "Investigation of Cermets Slide Bearings" by Assistant A.S.Efoyan.

Card 4/11

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S/044/62/000/009/004/069
A060/A000

AUTHOR: Geronimus, Ya. L.

TITLE: On some methods of constructing Burmester curves and points. I.

PERIODICAL: Referativnyy zhurnal, Matematika, no. 9, 1962, 65, abstract 9A366 ("Bul. Inst. politehn. Iaşi.", 1959, V, (IX), no. 3 - 4, 234 - 254 (Summaries in English, Rumanian))

√B

TEXT: In the theory of mechanisms, Burmester's curves are the curves of circular points and the curve of centers. The former is characterized by the equation $(x^2 + y^2)(mx + ly) - lm\,xy = 0$, and the latter by a similar equation, but with the parameter l replaced by l', defined by the equality: $1/l - 1/l' = 1/d$, where d is the diameter of the winding curve. The double point of each of these curves coincides with the instantaneous center of velocities. Here the first part considers the transformation of Burmester's curves into a straight line, an equilateral hyperbola, a circle, and a parabola, using projective methods. Geometrical methods of constructing Burmester's curves are given: 1) given the coordinate axes and two points, 2) given two points, the focal axis and a

Card 1/2

~~16(1)~~ 16 41 ... 67... 3

AUTHOR: Geronimus, Ya. L. SOV/20-129-4-3/68

TITLE: On the Order of Approximation by Means of Poisson's Integral

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 4, pp 726-728 (USSR)

ABSTRACT: Let $f(\theta) \in L(0,2\pi)$ be a complex-valued, 2π-periodic function of the real argument θ, $0 \leq \theta \leq 2\pi$. Let furthermore

(1) $F(re^{i\varphi}) = \frac{1}{2\pi} \int_0^{2\pi} f(\theta) P(r,\theta-\varphi) d\theta$, $P(r,t) = \frac{1-r^2}{1-2r\cos t+r^2}$, $r<1$

and

(2) $\Delta(r,\varphi) = F(re^{i\varphi}) - f(\varphi) = \frac{1}{2\pi} \int_0^{\pi} w_\varphi(t) P(r,t) dt$, $r<1$,

where $w_\varphi(t) = f(\varphi+t) + f(\varphi-t) - 2f(\varphi)$.

Let $f(\theta)$ be continuous in φ or let it have there a discontinuity of first kind; let

(4) $f(\varphi) = \frac{1}{2} \{ f(\varphi+0) + f(\varphi-0) \}$

and

(5) $W_\varphi(\delta) = \sup_{|t| \leq \delta} |w_\varphi(t)|$.

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Theorem 1: If for a γ $(0 < \gamma \leq 1)$ there exists the integral

On the Order of Approximation by Means of Poisson's Integral

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$$(6) \quad \int_0^{\pi} |w_{\varphi}(t)|\, t^{-1-\gamma} dt,$$

then for $r_0 \leqslant r < 1$ there holds the inequation

$$(7) \quad |\Delta(r,\varphi)| \leqslant C(1-r)^{\gamma} \int_0^{\pi} |w_{\varphi}(t)|\, t^{-1-\gamma} dt, \quad C = \frac{1}{\pi}\left(\frac{\pi^2}{4r_0}\right)^{\frac{1+\gamma}{2}} .$$

Theorem 2: For $r_0 \leqslant r < 1$ it holds

$$(9) \quad |\Delta(r,\varphi)| \leqslant C_2 \frac{1-r}{\delta^2}, \qquad C_2 = \frac{\pi}{4r_0}\left\{\int_0^{2\pi} |f(t)|\, dt + 2\pi |f(\varphi)|\right\} + 1$$

where δ is determined from

$$(10) \quad 1-r^2 = \delta^2 W_{\varphi}(\delta) .$$

Further 4 theorems contain estimations for $|\Delta(r,\varphi)|$ in other cases, especially if the behavior of the function on a set $E \subset [0,2\pi]$ is known, e.g.:

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67241 4

On the Order of Approximation by Means of Poisson's Integral SOV/20-129-4-3/68

Theorem 5: Let $f(\theta)$ be continuous on $[\alpha,\beta]\subset[0,2\pi]$ and let it have there the modulus of continuity $\omega(\delta)$. Then for $\alpha+\varepsilon\leqslant\varphi,\psi\leqslant\beta-\varepsilon$, $\varepsilon>0$, $r_0\leqslant r<1$ there holds the estimation

$$(15)\quad |\Delta(r,\varphi)|\leqslant c_5(1-r)+\omega(|\varphi-\psi|)+c_6\,\omega\left\{(1-r)\lg\frac{1}{1-r}\right\},$$

where the constants c_5 and c_6 do not depend on r,φ,ψ.

The author mentions I.P.Natanson. There are 2 Soviet references.

PRESENTED: July 16, 1959, by S.N.Bernshteyn, Academician.

SUBMITTED: June 25, 1959

Card 3/3

GERASIMOV, YA. L.

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov

Trudy, t. 20, vyp. 78 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences USSR. Seminar on the Theory of Machines and Mechanisms, Vol. 20, No. 78) Moscow, 1960. 59 p. Errata slip inserted. 2,700 copies printed.

Editorial Board: I. I. Artobolevskiy (Resp. Ed.), Scientific Supervisor of the Seminar, Academician; V. I. Baranov, Professor, Doctor of Technical Sciences; V. A. Gavrilenko, Professor, Doctor of Technical Sciences; V. A. Zinov'yev, Professor, Doctor of Technical Sciences; A. Ye. Kobrinskiy, Doctor of Technical Sciences; S. I. Levitskiy, professor, Doctor of Technical Sciences; N. P. [illegible]skiy, Candidate of Technical Sciences; L. N. Reshetov, Professor, Doctor of Technical Sciences; Ed. of Publishing House: M. M. Knorre; Tech. Ed.: I. F. Kuz'sheva.

PURPOSE: This book is intended for scientific research workers and engineers concerned with the theory and design of mechanisms.

COVERAGE: The collection contains articles dealing with theoretical problems of mechanisms and machines. Included are discussions on the simplification of various solutions, experimental methods of investigation of dynamic systems, the application of the Ball and Chebyshev points to solution of some problems of synthesis, and an article describing an analytical method [illegible]. Academician I. I. Artobolevskiy, scientific supervisor of the seminar, wrote a preface [illegible]. No personalities are mentioned. [illegible]

[illegible], M. L., Ya. A. [illegible], and T. T. [illegible]. Experimental Investigation of Electrically-Driven Dynamic Systems (Committed April [illegible]) 33

The authors made a theoretical and experimental investigation of the [illegible] of the [illegible] inertia of a [illegible] on the performance of a [illegible] unit. Also discussed is a [illegible] method for determining [illegible] of the dynamic parameters of the motor, which was developed by the authors.

~~Gerasimov, Ya. L.~~ Application of the Ball and Chebyshev Points to the Solution of Problems of the Synthesis of Mechanisms 43

The author gives graphical and analytical solutions of the problem of synthesizing straight-line mechanisms in which any given point of the connecting rod has a third-order (Ball's point) or fifth-order (Chebyshev's point) contact, with the straight-line segment. This solution is based on Burmester's theory and uses a number of transformations which have not been applied before in the synthesis of mechanisms.

AVAILABLE: Library of Congress

Card 2/2

VK/wrc/fal
12-14-60

S/044/62/000/009/005/069
A060/A000

AUTHOR: Geronimus, Ya. L.

TITLE: On some methods of constructing Burmester curves and points. II.

PERIODICAL: Referativnyy zhurnal, Matematika, no. 9, 1962, 65, abstract 9A367 ("Bul. Inst. politehn. Iaşi", 1960, v. 6, no. 3 - 4, 275 - 290 (Summaries in English, Rumanian))

TEXT: In the author's preceding paper (abstract 9A366) the construction of one of Burmester's curves was given. The present paper considers the simultaneous construction of both curves. For a complete determination of these curves it is necessary to give four conditions for the general case. Attention is paid to the case when the conditions imposed separately upon each of the curves do not determine it, but the totality of the conditions imposed upon both curves determine the latter. For the motion of a moving plane along the fixed plane the points of the first Burmester's curve possess the property that their trajectories have at those points an osculation of an order not lower than the third with their circles of curvature; it is known that in a

Card 1/2

GERONIMUS, Ya.L.

Applying Ball and Chernyshev points to the solution of some problems in the synthesis of mechanisms. Trudy Inst.mash.Sem.po teor.mash. 20 no.78:43-60 '60. (MIRA 1[illegible]:3)

(Mechanical movements)

16.3500

80206
S/038/60/024/02/04/007

AUTHOR: Geronimus, Ya.L.

TITLE: On Some Estimations for the Coefficients of Bounded Functions /6

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1960, Vol. 24, No. 2, pp. 203-212

TEXT: Let S denote the class of the functions

$$f(z) = \sum_{k=o}^{\infty} \alpha_k z^k$$ which are regular in $|z| < 1$ and satisfy the condition $|f(z)| < 1$.

Theorem 1: If $f(z) \in S$ and $\frac{3}{2} m < n \leq 2m$, then it holds:

$$\text{(II)} \quad |\alpha_{[illegible]}| \leq \begin{cases} \mu,\ \mu^2 - \mu^3 = |\alpha_n|^2, & |\alpha_n| \leq \alpha = 14\sqrt{3} - 24 \\ \frac{4\sqrt{3}}{8}\left\{1 - \frac{9}{8}|\alpha_n| + \left(1 - \frac{3}{4}|\alpha_n|\right)^{3/2}\right\}^{1/2}, & |\alpha_n| \geq \alpha \end{cases}$$

where $\mu > \frac{2}{3}$ is the root of $\mu^2 - \mu^3 = |\alpha_n|^2$. The equality sign only holds for

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On Some Estimations for the Coefficients of Bounded Functions

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$$f^*(z) = \begin{cases} z^{2m-n} \dfrac{\sqrt{1-\mu} + z^{n-m}}{z^{n-m}\sqrt{1-\mu} + 1}, & |\alpha_n| \leq \alpha \\[2ex] z^{2m-n} \dfrac{8\lambda^2 z^{2(n-m)} + 4\lambda z^{n-m} - 1}{8\lambda^2 + 4\lambda z^{n-m} - z^{2(n-m)}}, & \lambda = \sqrt{\dfrac{\sqrt{4 - |\alpha_n|} - 1}{8(1-|\alpha_n|)}}, \; |\alpha_n| > \alpha \end{cases}$$

Theorem 2 is the special case for $m = 1$, $n = 2$.
Theorem 3 : Let $f(z) \in S$. 1.) If m is the smallest value of the index n for which the inequality $|\alpha_n| \leq \frac{\sqrt{5}-1}{2}$ does not hold, then this inequality can be wrong only for the values $m \leq n \leq 2m$. 2.) If m is the smallest value of n for which $|\alpha_n| \leq \frac{14\sqrt{7}-20}{27}$ does not hold, then this inequality can

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On Some Estimations for the Coefficients of Bounded Functions

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be wrong only for the values $m \leq n \leq \frac{3}{2} m$.

Theorem 4 is already partially contained in (Ref. 3) by G.M. Goluzin. There are 7 references : 3 Soviet, 3 Hungarian and 1 American.

PRESENTED: by S.N. Bernshteyn, Academician

SUBMITTED: January 31, 1959

X

Card 3/3

GERONIMUS, Ya.L.

Finding Burmester points in case of a splitting of both Burmester curves. Trudy Inst.mash.Sem.po teor.mash. 22 no.85/86:5-13 '61. (MIRA 14:12)

(Geometry, Analytic) (Mechanical movements)

GERONIMUS, Ya.L.

Some fundamental inequalities in the theory of orthogonal polynomials. Dokl. AN SSSR 140 no.5:1002-1004 O '61.
(MIRA 15:2)

1. Khar'kovskiy aviatsionnyy institut. Predstavleno akademikom S.N.Bernshteynom.
(Inequalities(Mathematics))
(Functions, Orthogonal)

GERONIMUS, Ya.L.

Use of orthogonal polynomials in studying certain boundary properties of functions. Uch.zap. KHGU 115:97-112 '61. (MIRA 17:5)

GERONIMUS, Yakov Lazarevich; SPERANSKIY, N.V., red.; MURASHOVA, N.Ya., tekhn. red.

[Geometrical apparatus of the theory of synthesis of plane mechanisms]Geometricheski apparat teorii sinteza ploskikh mekhanizmov. Moskva, Fizmatgiz, 1962. 399 p. (MIRA 15:11)
(Geometry, Modern) (Mechanics, Analytic)

31942
S/057/62/032/001/001/018
B146/B112

9,3140

AUTHOR: Geronimus, Ya. L.

TITLE: Methods of producing fields with focusing properties

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 1, 1962, 3-14

TEXT: The author studied the motion of charged particles in a steady electromagnetic field; he describes methods of finding focusing fields in some special cases. The interaction between particles is neglected, and particle motion is considered in two-dimensional approximation. The Hamilton-Jacobian differential equation referred to orthogonal, curvilinear, isothermal coordinates q_1, q_2 ($ds^2 = \sigma^2(dq_1^2 + dq_2^2)$)

$$\left(\frac{\partial W}{\partial q_1} - \frac{e_0\sigma A_1}{c}\right)^2 + \left(\frac{\partial W}{\partial q_2} - \frac{e_0\sigma A_2}{c}\right)^2 = v^2, \qquad (1.3)$$

$$v^2 = v^2(q_1, q_2) = 2m_0\sigma^2\left\{h - e_0\varphi + \frac{1}{2m_0c^2}(h - e_0\varphi)^2\right\}, \qquad (1.4)$$

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Methods of producing fields with ... S/057/62/032/001/001/018
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(m_0 - mass at rest, h - total energy, e_0 - charge, v - particle velocity, A_1,A_2 - vector potential components) is integrated for the special case of a cyclic coordinate. One obtains the particle orbits, the focusing condition and, finally, the required electromagnetic field. It is shown that the integration variable in the focusing condition cannot be monotonically growing; cases are considered where it has one or two extreme values. The absence of the electric field and the case of constant v^2 for the variable with one extreme value, the case v^2 = const., and v = su (0 s 1, u - function of the coordinate) for the variable with two maxima are specially dealt with. A paper by P. P. Pavinskiy (Ref. 2: Izv. AN SSSR, ser. fizich., 18, no. 2, 175, 1954) is mentioned. There are 4 figures and 7 references: 5 Soviet and 2 non-Soviet.

ASSOCIATION: Khar'kovskiy aviatsionnyy institut (Khar'kov Aviation Institute)

SUBMITTED: November 25, 1960

Card 2/2

S/057/62/032/007/008/013
B104/B102

AUTHOR: Geronimus, Ya. L.

TITLE: Focusing fields

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 7, 1962, 848-858

TEXT: The motion of a material point in a focusing potential field is investigated. The Hamilton-Jakobi equation in curvilinear orthogonal coordinates q_1 and q_2 reads:

$$\frac{1}{2m}\left\{\frac{1}{h_1^2}\left(\frac{\partial W}{\partial q_1}\right)^2+\frac{1}{h_2^2}\left(\frac{\partial W}{\partial q_2}\right)^2\right\}+V=h, \quad V=V(q_1, q_2). \qquad (1.2).$$

To solve the equation, the coordinates are assumed to be isothermal: $h_1 = h_2 = \sigma(q_1,q_2)$; further, it is assumed that $\sigma^2(q_1,q_2) = a_1(q_1) + a_2(q_2)$, where a_1 and a_2 are known functions. For the potential, it is assumed: $V = \left[b_1(q_1) + b_2(q_2)\right]/\left[a_1(q_1) + a_2(q_2)\right]$,

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where $b_1(q_1)$ and $b_2(q_2)$ are the desired functions. On these assumptions, a total integral of (1.2) is obtained with the aid of Liouville's theorem. The condition for focusing is derived from the condition for the trajectories:

$$\int_{q_{10}}^{q_1^*} \frac{dq_1}{\sqrt{2mha_1(q_1) - b_1(q_1) + \gamma}} = \int_{q_{20}}^{q_2^*} \frac{dq_2}{\sqrt{2mha_2(q_2) - b_2(q_2) + \gamma}},$$

wherein q_1 and q_2 are the end points, q_{10} and q_{20} are the starting points of the trajectories, $\gamma_1 \leqslant \gamma \leqslant \gamma_2$ holds for the arbitrary constant γ. The focusing problem is solved for one and for two extreme values of q_2. Finally, a geometrical solution method according to Euler-Maupert is examined. There are 4 figures.

ASSOCIATION: Khar'kovskiy aviatsionnyy institut (Khar'kov Aviation Institute)

SUBMITTED: August 12, 1961

GERONIMUS, Ya.L.

Comments on V. A. Steklov's assumption. Dokl. AN SSSR 142 no.3: 507-509 Ja '62. (MIRA 15:1)

1. Khar'kovskiy aviatsionnyy institut. Predstavleno akademikom S.N.Bernshteynom.

(Polynomials)

GERONIMUS, Ya.L.

Relation between the order of growth of orthonormal polynomials and the nature of distribution. Dokl. AN SSSR 146 no.2:281-283 S '62. (MIRA 15:9)

1. Khar'kovskiy aviatsionnyy institut. Predstavleno akademikom S.N. Bernshteynom.
(Polynomials)

GERONIMUS, Ya.L.

Convergence of the Lagrange interpolation process with the points of interpolation in the roots of orthogonal polynomials. Izv. AN SSSR Ser. mat. 27 no.3:529-560 My-Je '63. (MIRA 16:6)

(Functions, Orthogonal)
(Interpolation)

GERONIMUS, Ya.L.

V.A. Steklov's assumption. Uch. zap. KHGU 135:79-88 '64.
(MIRA 17:10)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514910016-4"

GERONIMUS, Ya.L. (Khar'kov)

Mean weighted and uniform approximations of functions on rectifiable curves. Ukr. mat. zhur. 17 no.3:16-31 '65. (MIRA 18:6)

GERONIMUS, Ya.L.

Some limiting properties of orthogonal polynomials. Dokl. AN SSSR 165 no.1:19-20 N '65. (MIRA 18:10)

1. Khar'kovskiy aviatsionnyy institut. Submitted March 30, 1965.

GERONIMUS, Ya.L. (Khar'kov)

Some imbedding theorems. Izv.vys.ucheb.zav.; mat. no.6: 53-62 '65. (MIRA 19:1)

1. Submitted May 25, 1964.

L 32657-66 EWT(l) IJP(c)

ACC NR: AP6006430 SOURCE CODE: UR/0420/65/000/003/0003/0013

AUTHOR: Geronimus, Ya. L. (Professor)

ORG: none

TITLE: Several forms of equations of motion for a material system with nonholonomic nonlinear couplings

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 3, 1965, 3-13

TOPIC TAGS: motion equation, motion mechanics, theoretical mechanics

ABSTRACT: Most literature on analytical and theoretical mechanics considers material systems with holonomic or nonholonomic linear coupling. Only in the derivation of the Gauss minimum principle has it been shown that it holds for nonholonomic, nonlinear coupling. Since this principle is equivalent to the Appel' equations, the question of why the latter hold only for linear nonholonomic coupling remains unresolved. The present paper deals with several forms of equations of motion for systems with nonlinear, nonholonomic coupling. These are obtained by considering the virtual displacement of points (as demonstrated by M. V. Ostrogradskiy, no reference) at fixed configurations and velocities (as is normally done in the derivation of the Gauss principle). For a system with nonholonomic, nonlinear coupling

$$\varphi_s = \varphi_s(t,\ q_1,\ \ldots,\ q_n;\ \dot{q}_1,\ \ldots\ \dot{q}_n) = 0,\ (s = r+1,\ \ldots,\ m \leq n).$$

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ACC NR: AP6006430

and a relation between the generalized accelerations of the form

$$\frac{\partial \varphi_s}{\partial \dot{q}_1}\ddot{q}_1 + \frac{\partial \varphi_s}{\partial \dot{q}_2}\ddot{q}_2 + \ldots + \frac{\partial \varphi_s}{\partial \dot{q}_n}\ddot{q}_n + (^*) = 0, \quad (s = r+1, \ldots, m),$$

the equation of motion is derived as

$$Q_i + S_i + \lambda_1 \frac{\partial \varphi_1}{\partial \dot{q}_i} + \lambda_2 \frac{\partial \varphi_2}{\partial \dot{q}_i} + \ldots + \lambda_m \frac{\partial \varphi_m}{\partial \dot{q}_i} = 0, \quad (i = 1, 2, \ldots, n),$$

using the method of Lagrange multipliers. Similarly for an acceleration equation of the form

$$\ddot{q}_s = b_{s1}\ddot{q}_1 + b_{s2}\ddot{q}_2 + \ldots + b_{s,n-r}\ddot{q}_{n-r} + (^*), \quad (s = n-r+1, \ldots, n).$$

the equation of motion is derived as

$$\frac{\partial S}{\partial \ddot{q}_i} - \overline{Q}_i + \mu_1 \frac{\partial \overline{\varphi}_{r+1}}{\partial \dot{q}_1} + \mu_2 \frac{\partial \overline{\varphi}_{r+2}}{\partial \dot{q}_2} + \ldots + \mu_{m-r} \frac{\partial \varphi_m}{\partial \dot{q}_i}, \quad (i = 1, 2, \ldots, n-r).$$

Using a specific example, it is shown that the derived equations give the same results as the Appel' equations. Orig. art. has: 49 formulas.

SUB CODE: 20, 12 SUBM DATE: none/ ORIG REF: 006/ OTH REF: 001

Card 2/2 BLG

CA

GERONIMUS, R. S.

11

A serological analysis of ontogenesis in the bee V. V. Averkh and R. S. Heronimus. *Bull. biol. méd. exptl. U. R. S. S.* 4, 493-5(1937)(in English). Rabbits were immunized with antigens prepd. by mincing 4-day-old and 9-day-old larva, pupa and adult bees in 1:10 physiol. saline, allowing the suspensions to stand in the cold for 24 hrs. and filtering. The antigens were injected intravenously in 0.5-, 0.75- and 1.0-cc. portions at 3-day intervals and the rabbits were bled 6 days after the last injection. The antiserums were then set up in cross reactions as follows, with the figures representing the ratio in percentage of the heterologous to the homologous precipitin titer. With the antigens from adult bees, pupa, 9-day-old larva, 4-day-old larva, 2-day-old larva and eggs the rabbit antiserum to adult bees gave ratios of 100, 75, 40, 19, 11 and 0.75, resp., the antiserum to pupa gave ratios of 24.5, 100, 94, 25.3, 9 and 0.75, resp., the antiserum to 9-day-old larva gave ratios of 9, 56, 100, 33, 5 and 0.75, resp., and the antiserum to 4-day-old larva gave ratios of 14, 37, 24, 100, 41 and 0.75, resp.

S. A. Karjala

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

OFRONIKUS, [illegible]. S.

"Antigenic Structure of Dysentric Bacteria which Dissolve the Mannite."

Zhur Mikrobiol., Epidemiol., i Immunobio., No. 4-5, -1944-.

AVREKH, V.V., GERONIMUS, YE.S.

"Vi and O-Antigens in Typhoid Immunity" teo-part article:

I. "Separation of Vi-Antigen from the Complete Antigens of Typhoid Bacteria," Zhur. Mikrob., Epidem. i Immunobiol., no. 1, pp 33-35, 1947.

II. "Vi- and O-Antigens in Active and Passive Typhoid Immunity," Zhur. Mikrob., Epidem. i Immunobiol., no. 1,pp 35-38, 1947

State Control Inst. of Vaccines and Serums im. L.A. Tarasevich

GERONIMUS, Ye. S. PA 3/49T67

USSR/Medicine - Pneumococci Mar/Apr 48
Medicine - Nucleins

"Chemical Nature and Biological Specificity of the Substance Inducing Transformation of Types of Pneumococci," Ye. S. Geronimus, 2½ pp

"Uspekhi Sovrem Biol" Vol XXV, No 2

Describes experiments of M.McCarty (Bacter Rev, 1946). Discusses nature of transforming substance. Active agent is specific nucleic acid of desoxyribose type.

3/49T67

[illegible], [illegible]

Influenza

Abstracts of [illegible]. [illegible] No. [illegible], [illegible].

<u>Monthly List of [illegible] Accessions</u>, Library of Congress, [illegible] 195[illegible]. Uncl.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514910016-4"

GEROSIMUS, Ye.S., zaveduyushchiy otdelom inostrannoy literatury.

Abstracts of articles on epidemiology and research on virus hepatitis.
Zhur.mikrobiol.epid.i immun. no.2:90-92 F '53. (MLRA 6:5)

1. Zhurnal mikrobiologii, epidemiologii i immunobiologii.
(Hepatitis, Infectious)

GERONIMUS, Ye.S., zaveduyushchiy otdelom.

Abstract of articles on intestinal infections. Zhur. mikrobiol. epid. i immun. no.3:91-95 Mr '53. (MLRA 6:6)
(Intestines--Diseases)

GERONIMUS, Ye.S.; LITINSKIY, Yu.I.; SINAY, G.Ya., professor, zaveduyushchiy; TIMAKOV, V.D., professor, direktor.

S- and R-forms of Sonne dysentery bacilli and their relationship. Zhur. mikrobiol.epid.i immun. no.8:68-76 Ag '53. (MLRA 6:11)

1. Otdel epidemiologii Instituta epidemiologii i mikrobiologii im. pochetnogo akademika N.F.Gamalei Akademii meditsinskikh nauk SSSR (for Sinay). 2. Institut epidemiologii i mikrobiologii im. pochetnogo akademika N.F.Gamalei Akademii meditsinskikh nauk SSSR (for Timakov). (Dysentery)

GERONIMUS, Ye.S.

Foreign literature: Abstracts of articles on children's infections. Zhur. mikrobiol.epid.i immun. no.9:88-92 S '53. (MLRA 6:11)
(Bibliography--Children--Diseases) (Diseases--Children--Bibliography)
(Bibliography--Infection) (Infection--Bibliography)

GEROLIMUS, Ye.S.

Foreign literature. Research methods, antibiotics. Zhur.mikrobiol.epid.i immun. no.1:81-85 Ja '54. (MLRA 7:2)
(Toxins and antitoxins) (Antibiotics)

GERONIMUS, Ye.S.

Foreign literature; abstracts on problems of variability and immunity. Zhur.mikrobiol.epid.i immun. no.2:78-81 F '54.

(MLRA 7:3)

(Bibliography--Variation (Biology)) (Variation (Biology)--Bibliography) (Bibliography--Immunity) (Immunity--Bibliography)

GERONIMUS, Ye.S.

Foreign literature; abstracts of articles on children's infectious diseases. Zhur.mikrobiol.epid.i immun. no.3:90-93 Mr '54. (MLRA 7:4)
(Children--Diseases) (Infection)

GERONIMUS, Ye.S.

Foreign literature: abstracts on dysentery. Zhur.mikrobiol.epid.i immun. no.4:96-100 Ap '54. (MLRA 7:5)
(Dysentery--Abstracts)

GERONIMUS, Ye.S.

Foreign literature. Zhur. mikrobiol. epid. i immun. no.5:87-90 My '54. (MLRA 7:7)
(BACTERIOLOGY)

GERONIMUS, Ye.

Foreign literature, abstracts on intestinal infections. Zhur. mikrobiol. epid. i immun. no.6:90-94 Je '54. (MLRA 7:7)
(INTESTINES--DISEASES--ABSTRACTS)

GERONIMUS, Ye.

Foreign literature; abstracts on rickettsial diseases. Zhur.mikro-
biol.epid.i immun. no.7:114-118 Jl '54. (MLRA 7:9)
(RICKETTSIA--ABSTRACTS)

USSR/Medicine - Infectious diseases FD-2335

Card 1/1 Pub 148 - 36/36

Author : Geronimus, Ye. S.

Title : Foreign publications

Periodical : Zhur. mikro. epid. i immun. No 2, 123-127, Feb 1955

Abstract : 14 abstracts of articles published in non-USSR periodicals. The articles abstracted deal with children's infectious diseases.

GERONIMUS, E.S.

[redacted]

Foreign literature; abstracts on enteric infections. Zhur.mikrobiol.epid.i immun. no.3:121-124 Mr '55. (MLRA 8:7)
(INTESTINES--DISEASES--ABSTRACTS)

GERONIMUS, Ye.S.

Foreign literature; abstracts of articles on epidemiology. Zhur. mikrobiol.epid. i immun. no.4:115-118 Ap '55. (MLRA 8:7)
(EPIDEMIOLOGY--ABSTRACTS)

GERONIMUS, Ye.S.

Foreign literature; [abstracts of articles on viruses and Richettsia]
Zhur.mikrobiol.epid. i immun. no.6:115-119 (MLRA 8:9)
(VIRUS DISEASES--ABSTRACTS) (RICKETTSIA DISEASES--ABSTRACTS)

GERONIMUS, Ye.S.

"Morphological characteristics of the influenza virus as affected by passages."(Ctbl. Bakteriol., Parasitenkunde, Infektionskrank. und Hygiene. 162 no.4/5:225 '55.) H. Voss, E. Wengel. Reviewed by E.S. Geronimus. Zhur. mikrobiol. epid. i immun. no.12:105-108 D '55.

(MLRA 9:5)

(INFLUENZA VIRUSES) (VOSS, H.) (WENGEL, E.)

GERONIMUS, Ye.S.

"Data on the determination of the antistreptolysin O content of blood of patients with streptococcal diseases." (Ztschr. Immunitatsforsch. 112 no.2:99 '55.) F. Legler. Reviewed by E.S. Geronimus. Zhur. mikrobiol. epid. i immun. no.12:108-109 D '55.
(MLRA 9:5)

(TOXINS AND ANTITOXINS) (STREPTOCOCCUS)
(LEGLER, F.)

GERONIMUS, Ye.S.

"Experimental study of streptococcal diseases and their aftereffects." Report no.1 (Ceskosl. hyg. epidemiol., mikrobiol., immunol. 4 no. 1:7 '55.) J. Rotta, K. Raska, B.Bednar. Reviewed by E.S. Geronimus. Zhur. mikrobiol. epid. i immun. no.12:109 D '55. (MLRA 9:5)

(STREPTOCOCCUS) (ROTTA, J.) (RASKA, K.) (BEDNAR, B.)

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16(1) PHASE I BOOK EXPLOITATION SOV/2508

Matematicheskoye prosveshcheniye; matematika, yeye prepodavaniye, prilozheniya i istoriya, vyp. 4 (Mathematical Education; Mathematics, Its Teaching, Application and History, Nr. 4) Moscow, Gostekhizdat, 1959. 15,000 copies printed.

Ed.: I.N. Bronshteyn; Editorial Board of Series: I.N. Bronshteyn, A.I. Markushevich, I.M. Yaglom; Tech. Ed.: S.N. Akhlamov.

PURPOSE: This book is intended for persons without an extensive mathematical education who are interested in trends in contemporary mathematics. The book may be useful to high school mathematics teachers.

COVERAGE: The book consists of articles, reviews, and scientific and methodological reports, some of which are translations from other languages. The state of modern mathematics is covered, including applications, history, teaching of mathematics in schools, and mathematical developments in the USSR and abroad. One section deals with scientific and pedagogical life in the USSR and another contains reviews of certain mathematical publications. Some mathematical background is necessary to understand the book; certain articles require a knowledge of higher mathematics.

Mathematical Education; (Cont.) SOV/2508

Yaglom, I.M. An Interesting Book on Convex Bodies and Figures	297
Lopshin, A.M. A Unique Collection of Problems	301
Geronimus, Yu.Y. Modern Mathematics for Engineers	304

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D229/D304

16.4060 (1031, 1132)

AUTHORS: Vinograd, R.E., and Geronimus, Yu.V. (Moscow)

TITLE: An extrapolation-gradient method of finding the minimum of a quadratic function

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 6, 1961, 696 - 710

TEXT: The paper investigates the work of an automatic optimizer searching for the minimum of the function

$$y(x) = ax^2 + bx + c, \quad a > 0 \qquad (1)$$

(a, b, c are unknown constants) in the presence of random error at the output of measuring device, i.e. when for a given argument x the latter determines

$$Y(x) = y(x) + z \qquad (2)$$

instead of y(x). If there were no error z, the minimum abscissa

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for (1) $x_{min} = - b/2a$ could be found by extrapolation from 3 values of $y(x)$ at arbitrary points $x_0 - h$, x_0, $x_0 + h$ (the number h is called "trial step"). The point x_0 and the "trial step" are to be chosen at random and the transition from x_n to x_{n+1} (called "one cycle of search") is made by measuring the values

$$Y_n^- = Y(x_n - h), \quad Y_n = Y(x_n), \quad Y_n^+ = Y(x_n + h),$$

and determining the "working" step Δ_n; then $x_{n+1} = x_n + \Delta_n$. A provisional method of determining Δ is devised which turns out to be useless since the process is divergent. To avoid divergence one can choose some "protective number" $k > 0$ and make Δ_n depend on relation of Y_n^- etc. to k. There are four possible variants; the best one is

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$$x_{n+1} = x_n + \frac{h}{2}\,\frac{Y_n^- - Y_n^+}{k}, \qquad \text{if } Y_n^- + Y_n^+ - 2Y_n < k,$$

$$x_{n+1} = x_n + \frac{h}{2}\,\frac{Y_n^- - Y_n^+}{Y_n^- + Y_n^+ - 2Y_n}, \qquad \text{if } Y_n^- + Y_n^+ - 2Y_n \geqslant k. \tag{5}$$

Consisting in a combination of extrapolation method and gradient method which is the one analyzed in the paper. Chance values of the argument x_1, x_2 ... obtained by (5) lead to chance values of y: y_1, y_2; in addition there are values

$$y_n^{\pm} = y(x_n \pm h)$$

in every cycle. Optimization should make the quantities $y_n' = y_n - y_{min}$, $y_n'^{\pm} = y_n^{\pm} - y_{min}$ tend to 0. The quantity

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$$u_n = \frac{1}{3} (y_n^{'-} - Y_n^{'} + y_n^{'+})$$

is chosen as the measure of their common deviation from 0. The problems are: Determination of mathematical expectations $\bar{u}_n$ and dispersions Du_n, the limits $U = \lim \bar{u}_n$ and $D = \lim Du_n$ $(n \longrightarrow \infty)$ etc. D is called the established dispersion and U the established error. The results are: The sequences $\bar{u}_n$ and Du_n converge as geometrical progressions with respective denominators A and L; A is called the "convergence coefficient". The region of convergence of the process (shaded area on Fig.1) does not contain some values of k near 0, so that one cannot choose the protective number to be arbitrary small, without taking into account the value of h. Simultaneous decrease of convergence coefficient A and established error U is impossible; if h and k are so chosen that $A \longrightarrow 0$, $U \longrightarrow \infty$; if $U \longrightarrow 0$, $A \longrightarrow 1$. There is an optimum curve in the region of convergence, having the property that one can pass from any

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point of the region to a point on the curve in such a manner that one of the numbers A, U remains constant and the other diminishes. The authors thank A. Fel'dbaum for formulating the problem and discussing the results. There are 6 figures and 2 Soviet-bloc references.

SUBMITTED: February 18, 1961

Fig. 1. Region of convergence and the optimum curve:

Legend: 1 - Optimum curve; 2 - $k = 2ah^2$.

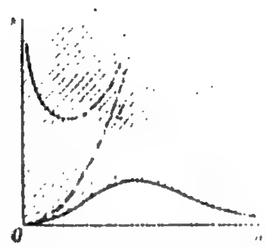

Рис. 1 Область сходимости и оптимальная кривая: 1 — оптимальная кривая, 2 — $k = 2ah^2$

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